City *of* Tigard
Memorandum

To: Mayor & City Councilors

From: Sidewalk Gap Analysis Group

Re: Pedestrian System Gap Analysis

Date: September 29, 2015

As an outcome of the FY 2016 Budget Hearings, staff was directed to conduct an analysis and identify any gaps in the city's inventory of its sidewalk system. Identifiable gaps include sidewalks, trails, and street crossings. The following are the stages that the group took to develop a methodology for defining citywide gaps; determining program benefits, tools, and results.

Stage 1 was to provide definitions of what is considered to be a sidewalk, trail, or signal crossing.

Sidewalk	An area specifically delineated and constructed for pedestrian use located behind a curb but within the rights of way or within an easement specifically established for that purpose.
Sidewalk Gap	Any loss of continuous sidewalk; and/or where any parcel or group of parcels is lacking sidewalks while the adjoining parcels have continuous sidewalks.
Walkways & Paths	Walkways can be built from the street, sidewalk or shared use path to a building, or can be created in parks or other public spaces. They can be hard (cement, brick, pavers, blacktop) or soft (gravel, wood mulch, sand).
Crossing Gap	A connection (street, trail, pedestrian generator, etc.) to a street with more than 5,000 Average Daily Traffic (ADT), or a railroad, freeway, creek, or other barrier – that is more than 300 feet from a crossing point (marked crosswalk).

Stage 2 outlines the methodology used to determine the types of indicators that are important in filtering the current inventory. The indicators were compiled into two segments: Benefits and Costs. Below is the list of criteria that can be used in the development of qualified list of potential projects from the current inventory:

Benefits of a Pedestrian System Gap Program	
Near Schools	Having adequate sidewalks and trails near schools provides significant benefit in providing a walk based travel option for students. This analysis includes public schools (K-12) in the Tigard Tualatin School District. Community Development's Safe Routes to School (SRTS) Coordinator indicated a ½ mile buffer around schools is adequate in identifying potential walk shed gaps.
Near Transit	Areas within ¼ mile of a transit stop or station. This represents a reasonable distance a person would walk to a transit stop.
Factors Influencing Costs associated with a Pedestrian System Gap Program	
Cost Deflators	
City Owned Property	Gaps located on city owned property have the potential of having lower cost as the city does not have to acquire land for the project
In Right of Way	Gaps located on public right of way have the potential of having lower cost as the city does not have to acquire right of way for the project
Cost Inflators	
Wetlands	Wetlands have the potential to increase cost due to designing structures that avoid or mitigate impacts sensitive areas
Presence of Open Drainage Ditches	Gaps located along streets with open ditches are likely to have higher costs as in most cases the project will involve having to address drainage
Presence of Steep Slopes	The presence of steep slopes has the ability to increase cost because of additional design solutions that are typically necessary to accommodate the sidewalk or trail (e.g., slope stabilization, retaining walls)

There were several factors that were identified which will likely affect overall project costs. To obtain a qualified list of potential projects the following factors were taken into consideration:

Factors for Included Gaps	Factors that Excluded Gaps
Near Schools Near Transit Gaps with cost deflators Gaps with no, or one, cost inflator	Removal of dead end-no connector streets such as cul-de-sacs and short dead end streets. Removal of gaps with two or more cost inflators Removal of gaps that are likely to be pursued as projects through other funding sources (e.g., CIP)

Stage 3 reflects the cost methodology used for developing the qualified list for improvements within the City of Tigard.

After removing dead-ends and gaps likely to be funded through other means, the remaining gaps were ranked for likely cost comparison based upon the presence of cost modifiers. Cost modifiers are defined as gaps that occur in the presence of wetlands, open drainage ditches or slopes exceeding 25%, which significantly increase the cost of a project.

Below are the rates used in estimating costs:

Sidewalks per linear foot	$250
Trails per linear foot	$150
Crossings, per crossing installed	$20,000

Stage 4 shows the cost of the various improvement types:

Other

Total miles of existing sidewalks within Tigard = 189

Total miles of all sidewalk gaps within Tigard = 95

Total miles of sidewalk gaps identified as being located within priority benefit areas and not containing high cost related indicators = 36

Estimated total cost to address all priority sidewalk gaps = $47,600,000

Trails

Total miles of all existing trails within Tigard = 18.2
Total miles of all trails gaps within Tigard = 6.1
Total miles of trails gaps identified as being located within priority benefit areas and not containing high cost related indicators = 1.4
Estimated total cost to address all priority trails gaps = $1,100,000

Crossings

Total number of street crossing gaps within Tigard = 131
Total number of staff recommended street crossings = 13
Estimated total cost to address street crossing gaps = $260,000

Estimated total cost to address all gaps identified as being located within priority benefit areas and not containing high cost inflators indicators = $49,000,000.

While it is difficult to cost out all the gaps in Tigard, in order to fund the gaps that were excluded in this analysis is roughly estimated to cost an additional $100,000,000 due to the additional cost inflators. This would bring the cost of filling every sidewalk, trail, and crossing gap up to approximately $150,000,000.